

WHAT IS CLAIMED IS:

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1. A semiconductor light emitting device comprising:
a nitride-based semiconductor layer including an
5 emission layer; and
a dielectric film formed on the surface of said
nitride-based semiconductor layer, wherein
said dielectric film contains a nitride on the side of
the interface between said dielectric film and said
10 nitride-based semiconductor layer while containing an oxide
on the side opposite to said nitride-based semiconductor layer.

2. The semiconductor light emitting device according
to claim 1, wherein
15 said dielectric film successively includes a nitride
film and an oxide film as said nitride and said oxide.

3. The semiconductor light emitting device according
to claim 2, wherein
20 said dielectric film further includes a compound film
containing nitrogen and oxygen between said nitride film and
said oxide film.

4. The semiconductor light emitting device according
25 to claim 3, wherein

said compound film has such a graded composition that the content of nitrogen gradually reduces and the content of oxygen gradually increases from the side of the interface between said compound film and said nitride film toward the side of the interface between said compound film and said oxide film.

5. The semiconductor light emitting device according to claim 2, wherein

10 said nitride film is a silicon nitride film or a titanium nitride film, and said oxide film is a silicon oxide film or a titanium oxide film.

6. The semiconductor light emitting device according to claim 1, wherein

said dielectric film includes a compound film containing nitrogen and oxygen as said nitride and said oxide, and said compound film has such a graded composition that the content of nitrogen gradually reduces and the content of oxygen gradually increases from the side of the interface between said compound film and said nitride-based semiconductor layer toward the opposite side.

7. The semiconductor light emitting device according to claim 6, wherein

said compound film is a compound film containing silicon or titanium and containing nitrogen and oxygen.

7-02 5 8. A semiconductor light emitting device comprising:
a nitride-based semiconductor layer including an emission layer; and

a dielectric film formed on the surface of said nitride-based semiconductor layer, wherein

10 said dielectric film contains a compound containing nitrogen and oxygen on the side of the interface between said dielectric film and said nitride-based semiconductor layer while containing an oxide on the side opposite to said nitride-based semiconductor layer.

15 9. The semiconductor light emitting device according to claim 8, wherein

said dielectric film includes a compound film as said compound and includes an oxide film as said oxide, while said compound film has such a graded composition that the content
20 of nitrogen gradually reduces and the content of oxygen gradually increases from the side of the interface between said compound film and said nitride-based semiconductor layer toward the opposite side.

25 10. The semiconductor light emitting device according

to claim 9, wherein

said compound film is a compound film containing silicon or titanium and containing nitrogen and oxygen, and said oxide film is a silicon oxide film or a titanium oxide film.

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11. A semiconductor light emitting device comprising:
a nitride-based semiconductor layer including an emission layer; and

10 a dielectric film formed on the surface of said nitride-based semiconductor layer, wherein

15 said dielectric film contains a nitride on the side of the interface between said dielectric film and said nitride-based semiconductor layer while containing a compound containing nitrogen and oxygen on the side opposite to said nitride-based semiconductor layer.

12. The semiconductor light emitting device according to claim 11, wherein

20 said dielectric film includes a nitride film as said nitride and includes a compound film as said compound, and said compound film has such a graded composition that the content of nitrogen gradually reduces and the content of oxygen gradually increases from the side of the interface between said compound film and said nitride film toward the opposite side.

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13. The semiconductor light emitting device according to claim 12, wherein

said nitride film is a silicon nitride film or a titanium nitride film, and said compound film is a compound film
5 containing silicon or titanium and containing nitrogen and oxygen.

14. The semiconductor light emitting device according to claim 1, wherein

10 said nitride-based semiconductor layer further includes a cladding layer formed on said emission layer, said cladding layer has a flat portion and a ridge portion located on said flat portion, and said dielectric film is formed on said flat portion of said cladding layer and the side surface of said
15 ridge portion.

15. The semiconductor light emitting device according to claim 14, wherein

the side surface of said ridge portion is irregularized,
20 and said dielectric film is formed on said flat portion of said cladding layer and the side surface of said ridge portion.

16. The semiconductor light emitting device according to claim 1, wherein

25 said nitride-based semiconductor layer further includes

a first conductivity type semiconductor layer provided under said emission layer and a second conductivity type semiconductor layer provided on said emission layer, a partial region of said nitride-based semiconductor layer is removed to partially expose said first conductivity type semiconductor layer, a first electrode is formed on said exposed region of said first conductivity type semiconductor layer, a second electrode is formed on said second conductivity type semiconductor layer, and said dielectric film is formed on the surface of said nitride-based semiconductor layer between said first electrode and said second electrode.

17. A semiconductor light emitting device comprising:
an emission layer composed of a nitride-based semiconductor;

a cladding layer formed on said emission layer and composed of a nitride-based semiconductor having a flat portion and a ridge portion located on said flat portion; the side surface of said ridge portion of said cladding layer being irregularized, and

a dielectric film formed on said flat portion of said cladding layer and the side surface of said ridge portion.

18. The semiconductor light emitting device according to claim 17, wherein

said dielectric film contains a nitride on the side of the interface between said dielectric film and said nitride-based semiconductor layer while containing an oxide on the side opposite to said nitride-based semiconductor layer.

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19. The semiconductor light emitting device according to claim 17, wherein

10 said dielectric film contains a compound containing nitrogen and oxygen on the side of the interface between said dielectric film and said nitride-based semiconductor layer while containing an oxide on the side opposite to said nitride-based semiconductor layer.

15 20. The semiconductor light emitting device according to claim 17, wherein

20 said dielectric film contains a nitride on the side of the interface between said dielectric film and said nitride-based semiconductor layer while containing a compound containing nitrogen and oxygen on the side opposite to said nitride-based semiconductor layer.